

WHAT IS CLAIMED IS:

1. An image data processing apparatus comprising:

first means for monitoring a level of a first digital signal

5 representative of an original picture in a prescribed region having a predetermined number of pixels, and deciding whether or not the monitored level changes discontinuously at a pixel of interest in the prescribed region;

second means for generating first data representative of a linear interpolation coefficient in response to a conversion magnification;

10 third means for generating second data representative of a non-linear-interpolation coefficient in response to the conversion magnification;

fourth means for selecting the first data generated by the second means as selection-result data when the first means decides that the  
15 monitored level does not change discontinuously at the pixel of interest, and selecting the second data generated by the third means as the selection-result data when the first means decides that the monitored level changes discontinuously at the pixel of interest; and

fifth means for subjecting the first digital signal to an  
20 interpolation-based filtering process responsive to the selection-result data generated by the fourth means to convert the first digital signal into a second digital signal representative of a conversion-result picture.

2. An image data processing apparatus as recited in claim 1, wherein  
25 the third means and the fourth means comprise means for using the level of the first digital signal at the pixel of interest as a level of the second digital signal at a pixel in a setting range containing a time point corresponding to the pixel of interest when the first means decides that the monitored level

changes discontinuously at the pixel of interest, and means for increasing the setting range as the conversion magnification decreases.

3. An image data processing apparatus as recited in claim 1, wherein  
5 the third means and the fourth means comprise means for using the level of the first digital signal at the pixel of interest as a level of the second digital signal at a pixel in a setting range containing a time point corresponding to the pixel of interest when the first means decides that the monitored level  
10 changes discontinuously at the pixel of interest, and means for increasing the setting range as the conversion magnification increases in cases where the conversion magnification corresponds to picture enlarging conversion.

4. An image data processing apparatus comprising:  
first means for detecting luminance levels represented by a  
15 predetermined number of pieces of a first digital signal representative of an original picture, the pieces of the first digital signal indicating periodically-updated neighboring pixels including a periodically-updated pixel of interest in the original picture;

second means for calculating differences among the luminance  
20 levels detected by the first means;

third means for deciding whether or not an absolute value of each of the differences calculated by the second means exceeds a predetermined threshold value;

fourth means for determining whether or not the pixel of interest  
25 corresponds to an isolated point in the original picture in response to a result of the deciding by the third means;

fifth means for setting a luminance level represented by a piece in question of a second digital signal representative of a conversion-result

picture in accordance with the luminance level represented by the piece of the first digital signal which indicates the pixel of interest without interpolation when the fourth means determines that the pixel of interest corresponds to an isolated point in the original picture, the piece in

5 . question of the second digital signal indicating a pixel in the conversion-result picture which corresponds to the pixel of interest in the original picture; and

6 . sixth means for setting the luminance level represented by the piece in question of the second digital signal according to interpolation responsive  
10 to luminance levels represented by neighboring pieces of the first digital signal when the fourth means determines that the pixel of interest does not corresponds to an isolated point in the original picture.